

Activities Tool Kit: EnviroScape

How-to Guidance

Overview

An EnviroScape is a molded plastic model of a watershed complete with various types of land use including residential, transportation, agricultural, construction, recreation and forestry areas. The purpose of the EnviroScape is to demonstrate how water pollution can result from a variety of



activities and sources in our own backyards and neighborhoods, and how the pollution can impact our water resources. This model is particularly effective at demonstrating to children how rain and water runoff carries pollution over land and into water bodies.

Demonstrations can take 15 minutes to a half-hour depending on the detail you go into and is most effective with groups of 15 or less at a time. Activities are most appropriate for ages seven and up. Loaner and purchasing information provided below.

Materials

- EnviroScape model
- Cocoa powder
- Food coloring
- Sprinkles
- Spray bottle
- Water
- Towels or paper towels

Method

1. Getting started: Gather your materials. Set up the EnviroScape with buildings, trees, houses, cars, and animals (refer to instruction booklet diagram provided with model for assistance and additional activity information). Secure the plug in the bottom of the lake and place one of the plastic containers under the lake. Have a spray bottle full of water, as well as a water source to refill the spray bottle.

2. Water pollution education: With the audience gathered around, explain the model and go over the various land uses on the EnviroScape. You can compare it to the town; “it has some of the things that are in this neighborhood, houses, farm, construction, park – where people walk their dogs, logging, lake, river, streams, bay, etc.” Then you can provide a little lesson in water pollution.

- **Watersheds**—“How does the lake, pond, or bay fill with water?” This model is excellent because all of the rain and snow (spray bottle) drains into the model’s waterbody. Ask participants, “What is a watershed?” Then explain, “A watershed is a land area that drains to a lake, river, or ocean. We are in a small watershed right now.” You can show this by spraying water over the model.
- **Local pollution sources**—Ask the audience if they can think of any potential pollution sources. If the audience does not list all of the sources (sediment or soil, pesticides, fertilizers, oil and other automobile fluids, farm animal and pet waste, septic systems, sewage, factory discharges, etc.) show them ones that they have missed, i.e., pollution from the agricultural land including farm animal waste as well as loose soil runoff from the fields in addition to pesticide and fertilizer use. In the construction and forestry area you can talk about the soil erosion and how it is a pollutant in water. In the residential area you want to highlight the pollution from pesticides and fertilizers, as well as potential oil runoff from changing a car’s oil or driving the car. For the residential area, you should concentrate on the pet waste. Use appropriate materials to demonstrate the pollution, i.e., for dirt runoff, place cocoa powder

over farm field, or sprinkles on the grass areas. Dog waste can be simulated by slightly wetting the cocoa powder and letting it dry in clumps. Let the audience sprinkle or apply the wastes around the sources.

- **Let the rain begin**—Once all areas of the EnviroScape have been discussed and pollution sources identified, depending on the age group, you can either begin to spray the EnviroScape to simulate rain or let members from the audience spray the model. As the water begins to run over the model, be sure to highlight the impact that each of the individuals can have on water quality. Note the storm drain, and how any water from rain, or spraying your driveway goes directly from the storm drain to the main waterbody which everyone shares. “What happens if someone is walking their dog in the park way up in the neighborhood – does it go into the water?” Also highlight the smaller waterbodies flowing into the larger ones.
- **Would you want to drink the water?**—Point out how polluted the water is. “Would you want to swim in or drink this water?” Explain the water pollution impacts, including the sediment smothering fish eggs and the bugs and plants that fish eat. The cloudy water makes it hard for the fish and turtles to find their food. Fertilizers make the plants in the water grow too fast and take up all of the oxygen.
- **Help keep our water clean**—Once the audience sees the polluted water, you can begin to discuss ways that the individuals can help prevent water pollution. At this time you can place emphasis on cleaning up after your dog, and connect the EnviroScape to your Scoop the Poop campaign to reiterate its importance. You can also discuss the ways to individually prevent other forms of water pollution, such as using little or no fertilizer and pesticides, or properly disposing of oil from your car, or even best management practices for construction sites.

Summary

The EnviroScape is a great way to demonstrate the importance of cleaning up after your dog. It physically demonstrates what the eye can not always see, and can heighten the awareness and importance of the issue. The EnviroScape can also highlight other practices to maintain healthy water quality and raise awareness about general watershed concepts and nonpoint source pollution. The model is designed in so that it can relate to many types of watersheds, covering a variety of land uses making it valuable and pertinent to many communities.

Where can I find an EnviroScape?

There are many communities and organizations that have EnviroScapes that can be borrowed or loaned out for periods of time. Contacts for a loaner include:

- The N.H Department of Environmental Services, 29 Hazen Drive, Concord, 03301, (603) 271-7889 or bmcmillan@des.state.nh.us.
- The Dover Department of Public Works, 271 Mast Road, Dover, NH 03820 (603) 516-6073 or d.peschel@ci.dover.nh.us
- The Great Bay National Estuarine Research Reserve, 89 Depot Rd., Stratham, NH 03885, (603) 778-0015 or kelle@greatbay.org

If you have the resources (\$800 and up), EnviroScapes can be purchased at www.enviroscales.com.